

**WHAT IS CLAIMED IS:**

1. A process for producing ethylene comprising:
  - (a) preparing a low sulfur liquid hydrocarbon composition containing less than one ppm sulfur;
  - 5 (b) adding to said low sulfur composition a sulfur-containing compound or a sulfur-containing liquid hydrocarbon mixture to produce a blend containing at least one ppm of sulfur;
  - (c) feeding said blend to a cracker unit;
  - (d) converting the blend in the cracker unit to a product stream comprising
  - 10 ethylene; and,
  - (e) recovering ethylene from the product stream of the cracker unit.
2. The process according to claim 1, wherein the cracker unit is a naphtha cracker.
3. The process according to claim 1, wherein the sulfur-containing compound
- 15 is dimethyl disulfide.
4. The process according to claim 1, wherein the low sulfur liquid hydrocarbon composition comprises a Fischer-Tropsch naphtha.
5. The process according to claim 4, wherein the Fischer-Tropsch naphtha is derived from synthesis gas.
- 20 6. The process according to claim 5, wherein the synthesis gas is derived from natural gas.

7. The process according to claim 1, wherein the low sulfur liquid hydrocarbon composition comprises  $C_{11}$ - $C_{50}$  compounds.
8. The process according to claim 7, wherein the sulfur-containing liquid hydrocarbon mixture comprises  $C_5$ - $C_{10}$  compound.
- 5 9. The process according to claim 1, where the blend fed to the cracker unit contains at least about 10 ppm sulfur.
- 10 10. The process according to claim 9, wherein said blend contains at least 100 ppm sulfur.
- 15 11. The process according to claim 1, which further includes the steps of forming a Fischer-Tropsch syncrude, separating a naphtha therefrom or forming a lighter naphtha fraction therefrom containing at least one  $C_5$ - $C_{10}$  hydrocarbon having a sulfur content of at least 1 ppm, and a heavier fraction, refining said heavier fraction to reduce its sulfur content to less than 1 ppm, and blending said Fischer-Tropsch syncrude, said lighter naphtha fraction and said refined heavier fraction to form the feed to the cracking unit.
- 20 12. The process according to claim 11, which includes the steps of separating said syncrude into a naphtha fraction containing at least one  $C_5$ - $C_{10}$  hydrocarbon and a heavier fraction, blending said heavier fraction with a heavy fraction obtained from an Fischer-Tropsch syncrude, and refining the blend to reduce the sulfur content to below 100 ppm before mixing with said lighter naphtha fraction.
13. A process for manufacturing ethylene including a first site and a second site, remote from each other, wherein the first site forms a Fischer-Tropsch naphtha

having less than 1 ppm sulfur to be used at the second site, the second site forming the ethylene, the process comprising:

(a) receiving at the second site the Fischer-Tropsch naphtha having less than 1 ppm sulfur, which is made by:

- 5 (i) converting methane to syngas;
- (ii) subjecting the syngas to Fischer-Tropsch synthesis to form hydrocarbonaceous products;
- (iii) isolating the Fischer-Tropsch naphtha having less than 1 ppm sulfur from the hydrocarbonaceous products,
- 10 (b) adding at least one sulfur-containing compound to the Fischer-Tropsch naphtha to provide a blend having at least 1 ppm sulfur;
- (c) converting the blend in a cracker unit to a product stream comprising ethylene; and
- (d) isolating ethylene from the product stream of the cracker unit.

15

14. The process according to claim 13, wherein the blend contains about 10 to 100 ppm sulfur.

15. The process according to claim 13, wherein the Fischer-Tropsch naphtha is received at the second site from a marine tanker, rail car, pipeline, truck, or barge.

20

16. The process according to claim 13, wherein the sulfur-containing compound is selected from the group consisting of dimethyl disulfide, methylethyldisulfide, diethyl disulfide, diethyl sulfide, dipropyl sulfide, and mixtures thereof.

17. A process for manufacturing ethylene including a first site and a second site, remote from each other, wherein the first site forms a Fischer-Tropsch hydrocarbonaceous product, including at least one naphtha and having less than 1

25

ppm sulfur to be used at the second site, the second site forming the ethylene, the process comprising:

(a) transporting the Fischer-Tropsch hydrocarbonaceous product including at least one naphtha and having less than 1 ppm sulfur, which is made by:

- 5 (i) converting methane to syngas;
- (ii) subjecting the syngas to Fischer-Tropsch synthesis to form a hydrocarbonaceous products;
- (iii) isolating a Fischer-Tropsch hydrocarbonaceous product including at least one naphtha from the hydrocarbonaceous
- 10 products,;

(b) receiving at the second site the Fischer-Tropsch hydrocarbonaceous product including at least one naphtha and having less than 1 ppm sulfur

- (c) blending the Fischer-Tropsch hydrocarbonaceous product including at least one naphtha and having less than 1 ppm sulfur with a sulfur-containing
- 15 composition to provide a blend having at least 1 ppm sulfur; ;

(d) feeding the blend to a cracker unit;

(e) converting the blend in the cracker unit to a product stream comprising ethylene; and

(f) isolating ethylene from the product stream of the cracker unit.

- 20 18. The process according to claim 17, wherein the transporting is performed by marine tanker, rail car, pipeline, track, barge, or combinations thereof.

19. The process according to claim 17, wherein the sulfur-containing composition is selected from the group consisting of dimethyl disulfide, methylethyldisulfide, diethyl disulfide, diethyl sulfide, dipropyl sulfide, and mixtures thereof.

Q:\005950\708\docs\01-12-12 application.wpd